

# **MISO Overview and Resource Adequacy**

*Michigan House Energy Policy Standing Committee Meeting*

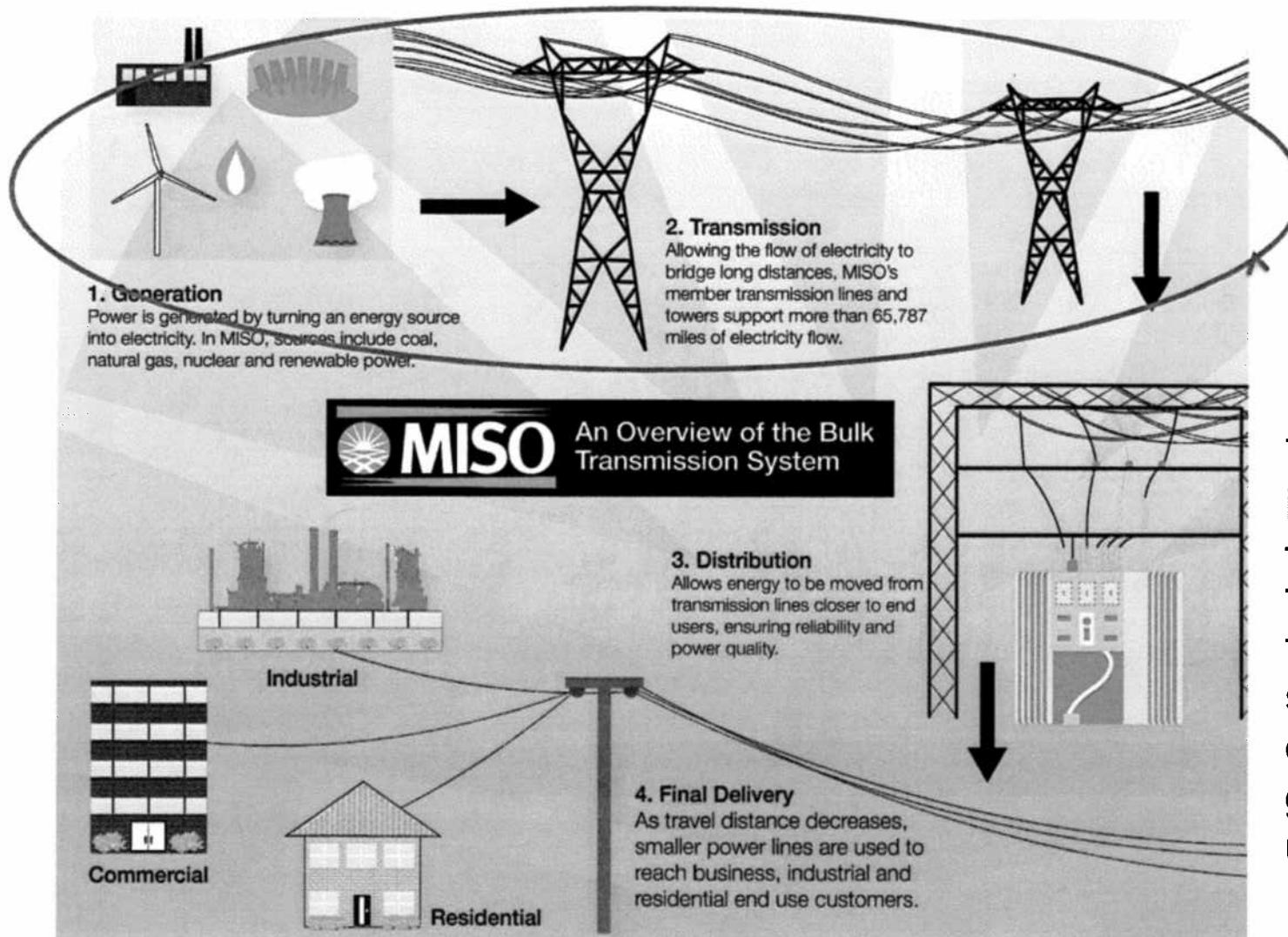
March 4, 2015



# MISO Overview

- MISO is an independent, non-profit organization responsible for maintaining reliable transmission of power in 15 states and the Canadian province of Manitoba
- MISO provides reliable system operations and benefits through...
  - Cost Savings. MISO creates value by performing regional transmission planning at reduced administrative fees. By planning ahead and relying on diverse resources, consumers save money.
  - Price Transparency. MISO publishes wholesale energy prices to encourage competition among generators and provide policy makers with valuable data to make more informed and timely decisions.
  - Reliability. Through MISO's markets, we ensure the most optimal energy is delivered as efficiently and cost-effectively as possible to maintain system reliability. MISO also works to increase reliability by planning for future transmission needs and assuring the construction of necessary transmission projects.

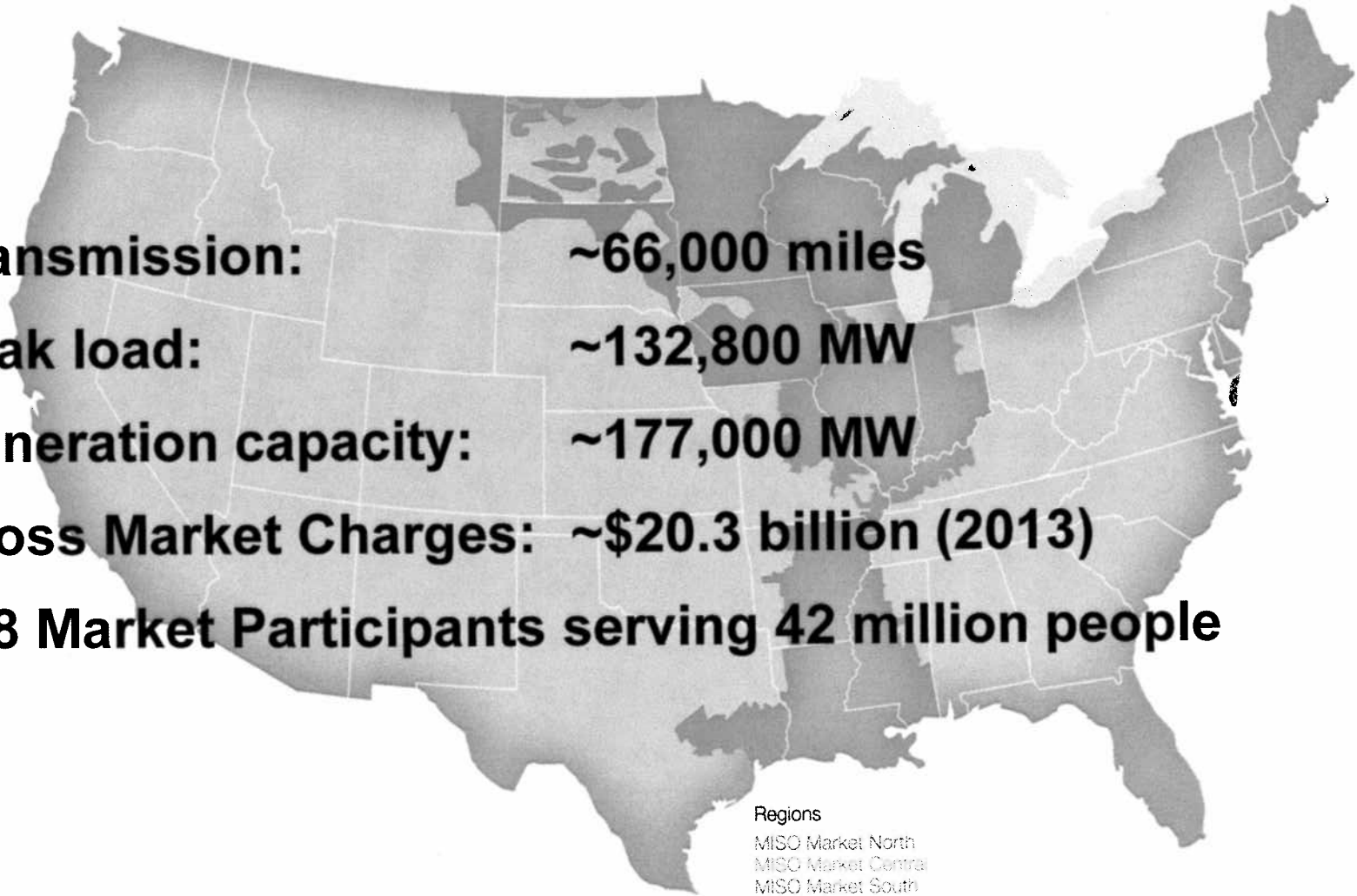
# MISO – What We Do



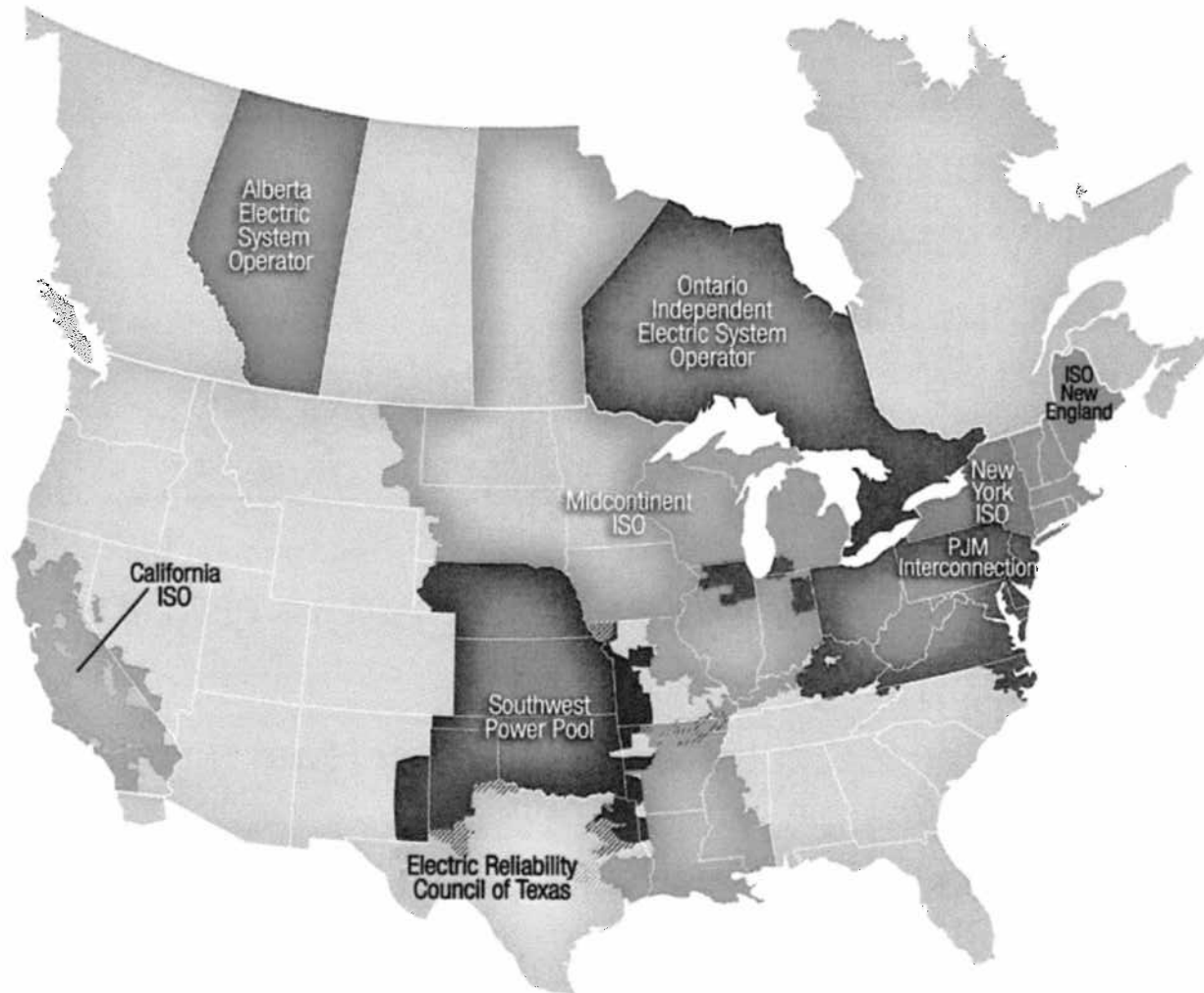
MISO's role in the overall process is here – managing flows on the transmissions system by directing generator usage.

# MISO Market Footprint

- **Transmission:** ~66,000 miles
- **Peak load:** ~132,800 MW
- **Generation capacity:** ~177,000 MW
- **Gross Market Charges:** ~\$20.3 billion (2013)
- **408 Market Participants serving 42 million people**

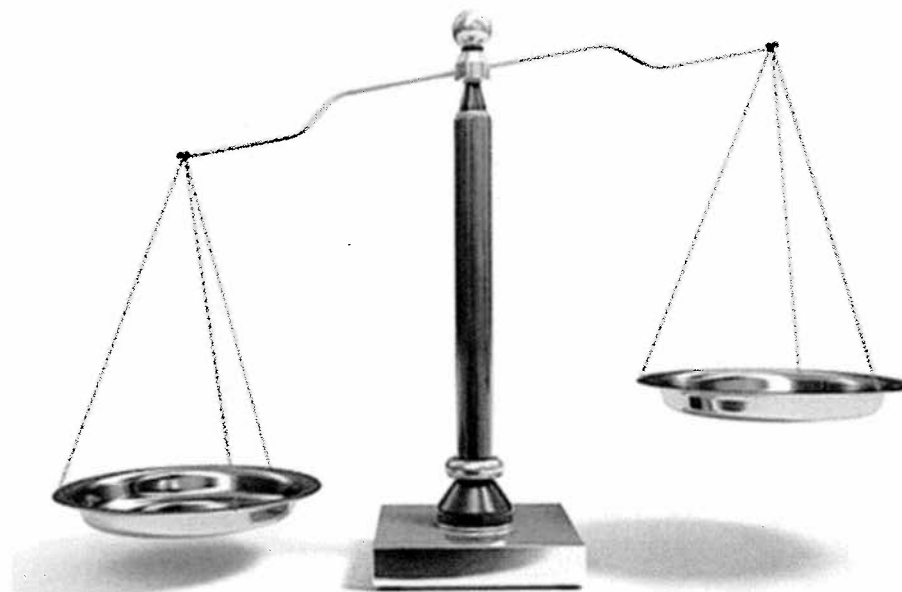


**Geographically, MISO is the largest regional transmission organization and independent system operator in North America**



# The Balancing Act

- Day-to-day MISO reliably and efficiently balances the needs of customers with available supply through a centralized, competitive energy markets
- Long term reliability (resource adequacy) is assured through mandatory reserve margin requirements (planning reserve margin)
  - Flexibility is provided for States to set higher or lower than MISO determined reserve margin requirements
  - Flexibility is provided for Load Serving Entities to meet there requirements



# Resource Adequacy Overview

- The term Resource Adequacy refers to the electricity industry's ability to serve peak demand and provide a sufficient margin of excess supply to achieve an agreed-upon level of reliability (planning reserve margin)
- In the MISO region, Load Serving Entities, with oversight by the States as applicable by jurisdiction, are responsible for their Resource Adequacy
- Load Serving Entities must meet their load forecast plus their planning reserve margin – this can be done through
  - Owned resources
  - Controlled resources
  - Voluntary capacity auction

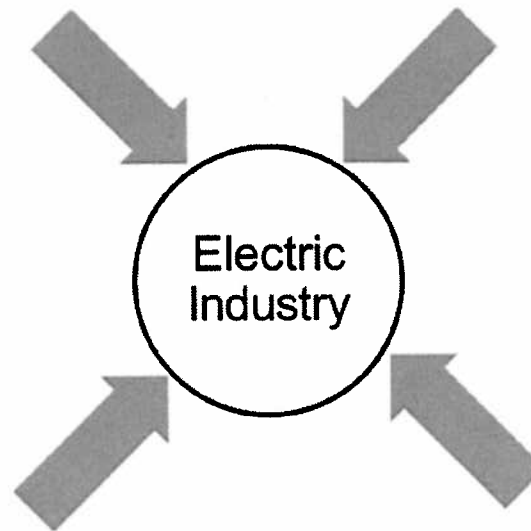
# Many factors affecting the industry also impact Resource Adequacy

## Environmental / Energy Policy

- Mercury & Air Toxics
- Carbon Standards
- Ozone Standards
- State / Federal

## Macro-economics / Power Demand

- Economic Recovery
- Demand Growth Shift
- Return on Equity Pressures



## Fuel Supply Shifts

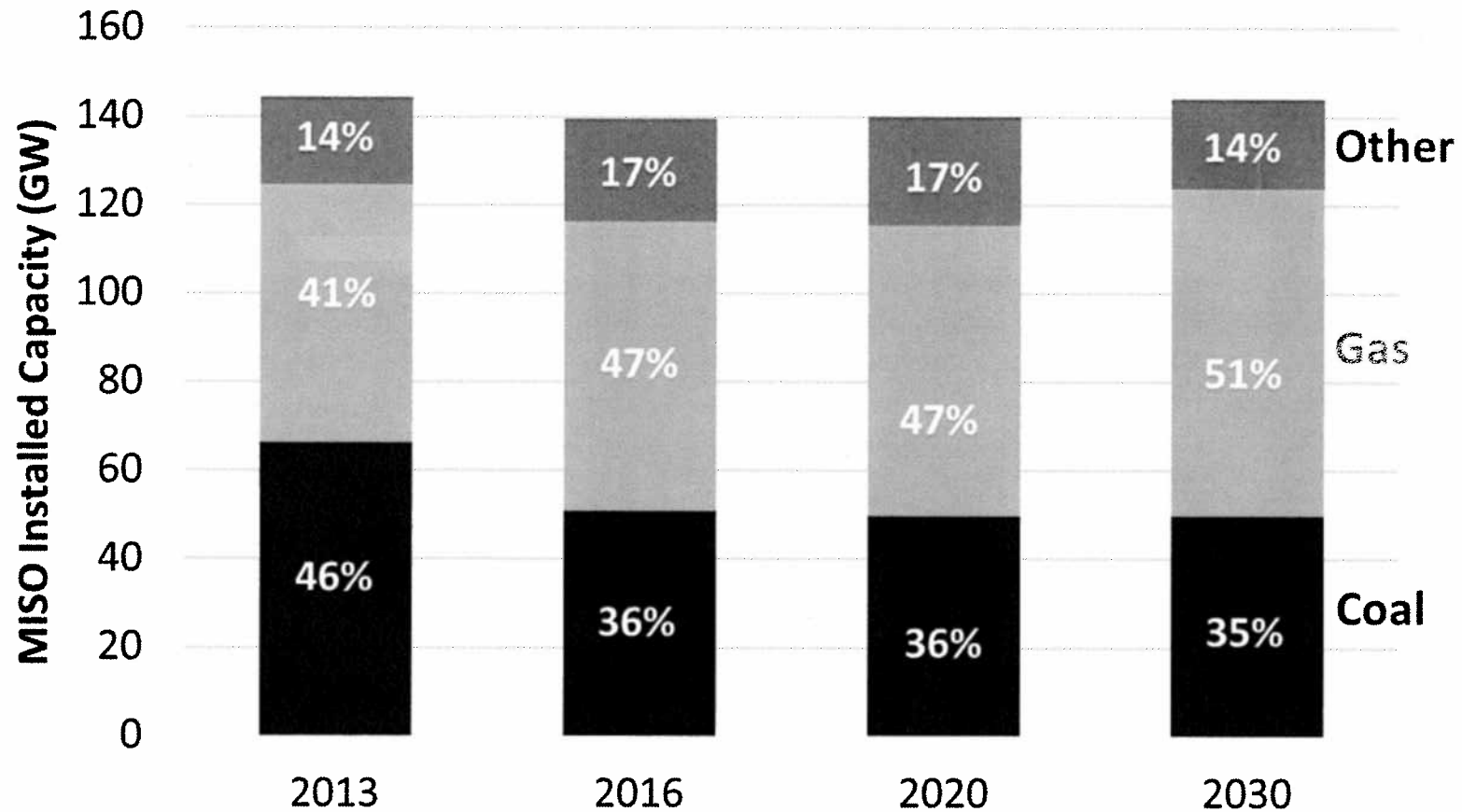
- Natural Gas
- Coal
- Transportation

## Emerging Technologies

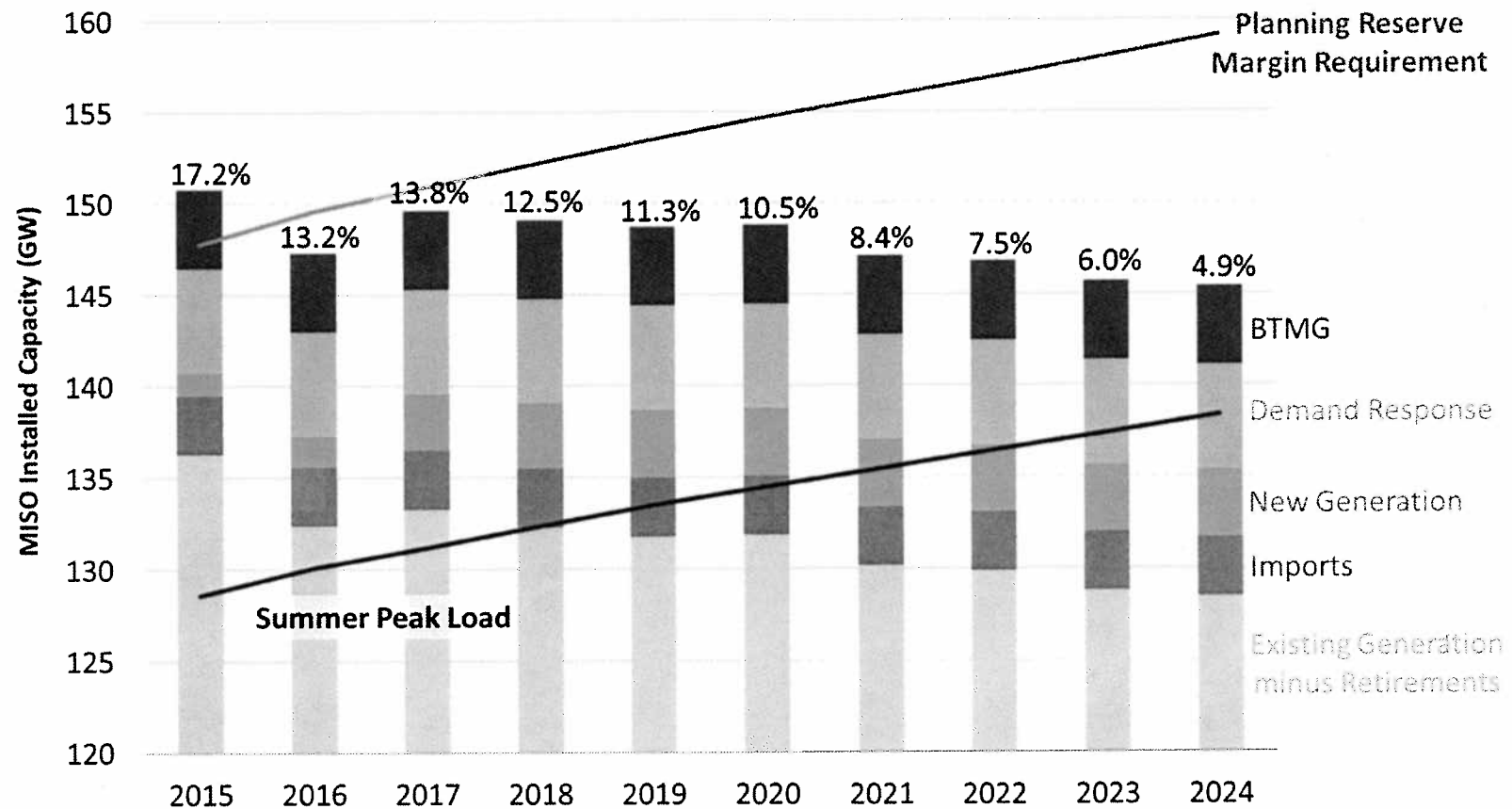
- Wind
- Solar
- Distributed Generation
- Load Modifying Resources
- Storage



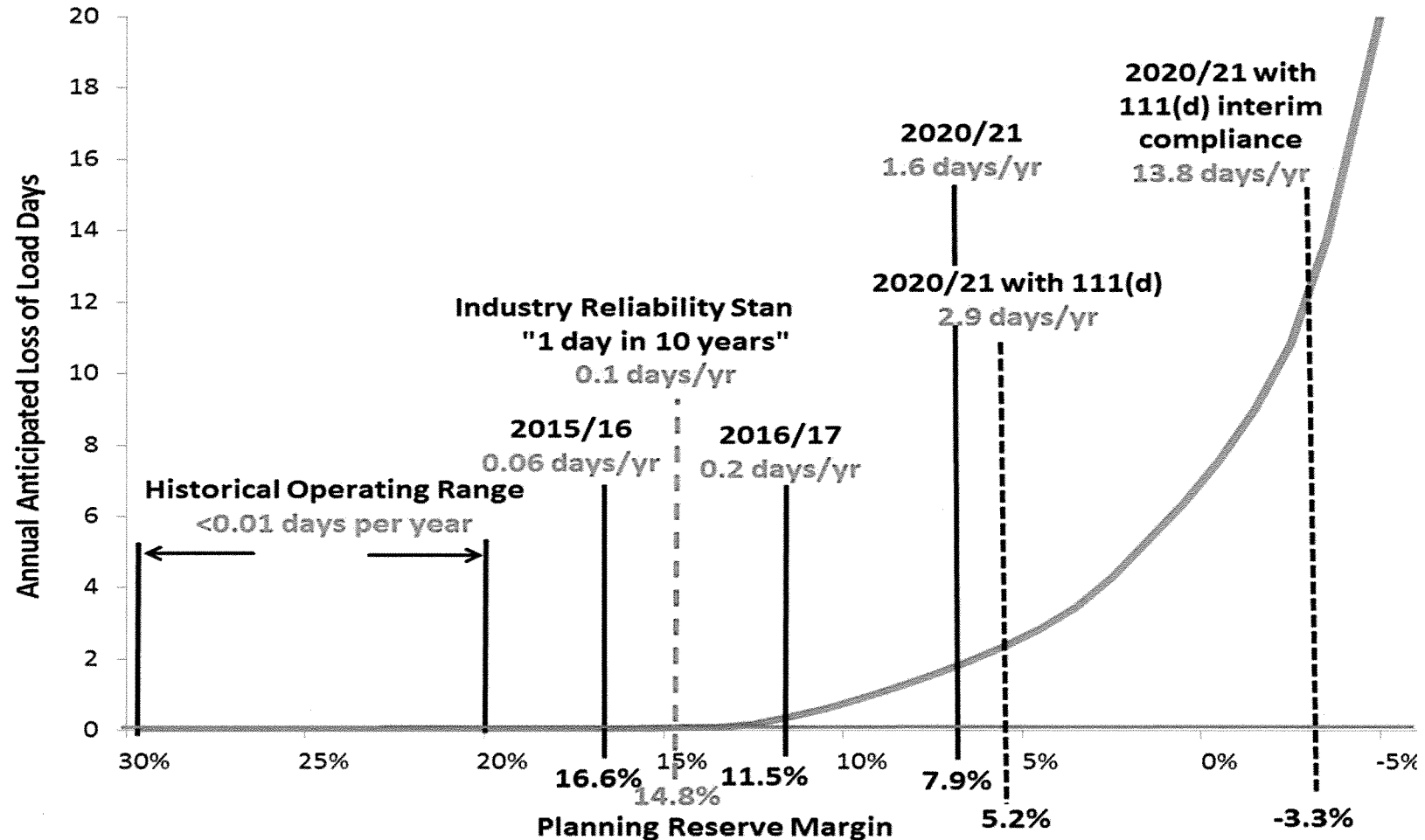
# Projection of Installed Generating Capacity



# Declining Planning Reserve Margins

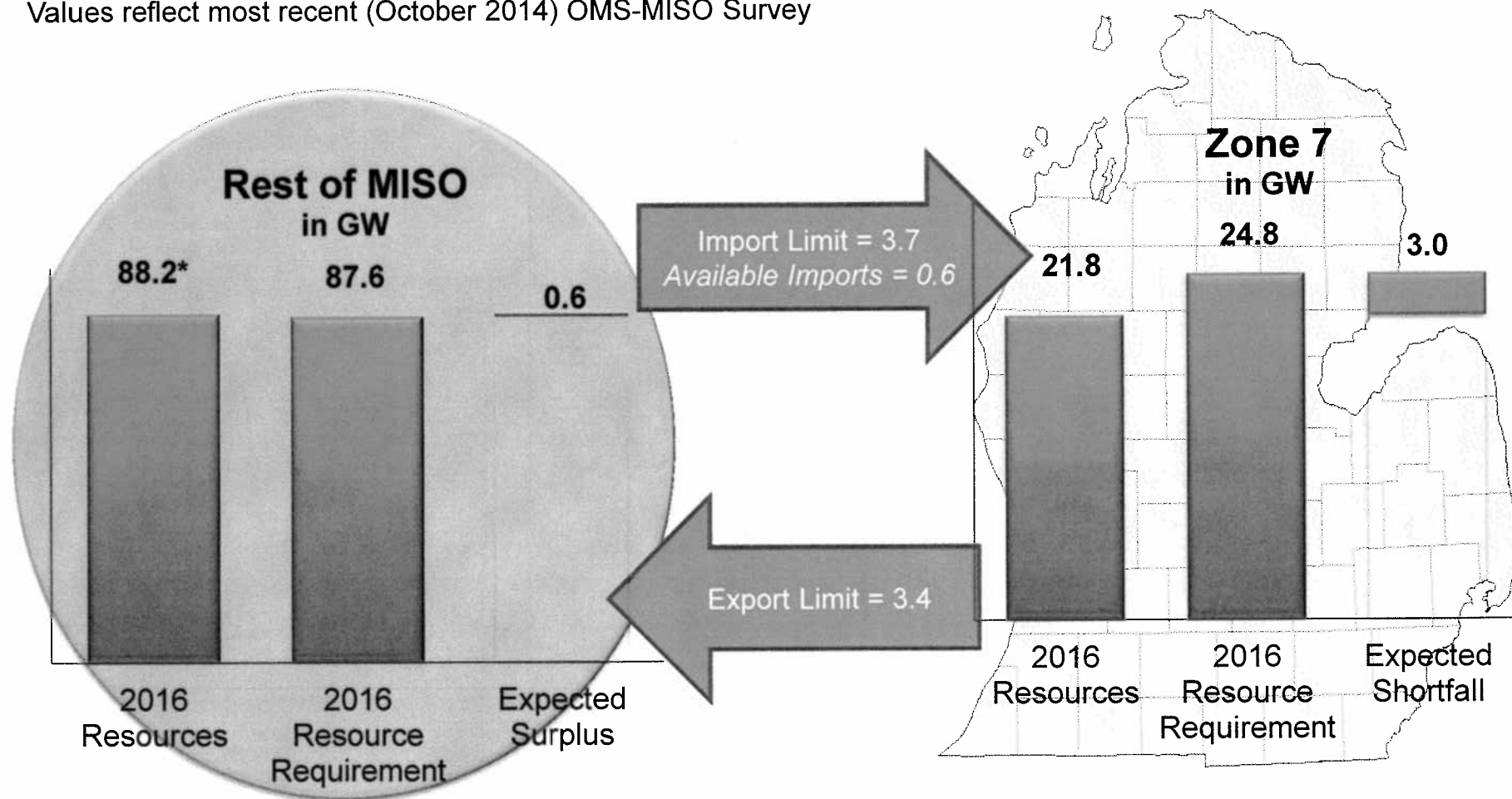


As planning reserve margins erode the probability of loss of load and reliance on Emergency Operating Procedures increase exponentially



# Current Projections Show Resource Adequacy Risk in 2016

Values reflect most recent (October 2014) OMS-MISO Survey



\* Includes 1 GW of resources from MISO South Region



## **MISO is actively pursuing multiple avenues to assess and address potential resource shortfalls**

- MISO will continue to partner with regulators and load serving entities to improve the long-term, regional view of reliability and resource adequacy.
- MISO continues to explore opportunities to improve its processes that facilitate resource adequacy in a transparent, equitable and efficient manner.
- MISO is evaluating the design of the Resource Adequacy construct, and to ensure alignment with the changing landscape.

**For additional questions:**

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